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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,717

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Donald W. Kendrick

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SUITE 1201

NEW HAVEN, CT 06510

EXAMINER

NDUBIZU, CHUKA CLEMENT

ART UNIT

PAPER NUMBER

3749

MAIL DATE

DELIVERY MODE

03/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/733,717	Applicant(s) KENDRICK, DONALD W.	
	Examiner CHUKA C. NDUBIZU	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Receipt of applicant's amendment filed October 22 2007 is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 1, 2, 5-8, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter 5,494,004 in view of Adams 4,545,329. Hunter teaches the invention as claimed (figs. 1-12) a pulsed detonation surface cleaning apparatus for heating vessel comprising, a conduit 21, 31 extending downstream from the apparatus wall 83 (fig 3) and having: inner and outer walls along at least a portion of a length (walls enclosing 291 in fig 8); and a space 291, 293 between the inner and outer walls for carrying a cooling fluid; the space extending from an upstream end 21A outside the vessel wall at

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least partially downstream 31A within the wall (see fig 2 and 3); a cooling fluid inlet 21A; and a cooling fluid outlet along the conduit 31A (column 5 line 1-8); the inner and outer walls each having a downstream rim 35; the cooling fluid outlet is between the inner and outer walls (figs. 8 and 11); wherein the said vessel, is a furnace (column 1 line 31 and column 2 line 11, 12), having a furnace wall 83 separating a furnace exterior from a furnace interior 85 (fig 2) and having a wall aperture 81; and a detonative source 71C of said gas; wherein the conduit extends through the furnace wall to protrude downstream of an interior surface of the furnace wall (see fig 3); a surface 35 for guiding gas from the soot blower gas conduit into the interior of the vessel; means for cooling (cooling water) the nozzle (column 4 line 64-67 and column 5 line 5-7);

However, Hunter does not specifically disclose a cleaning apparatus comprising a mounting flange (even though it is notoriously well known that flanges are normally used to mount tubes to surfaces) for coupling the apparatus to the upstream conduit delivering the gas and having: first and second faces; an inboard surface bounding a central aperture; an outboard perimeter; and an array of bolt holes between the first and second faces; wherein the inner wall is essentially formed by a first tubular piece extending from an upstream rim to a downstream rim and having interior and exterior surfaces, along an upstream portion, the interior surface providing the flange inboard surface; wherein the flange is upstream of an exterior surface of the furnace wall and; means for mounting the nozzle to an upstream soot blower gas conduit.

Adams discloses in a water-heating device, where a similar problem of mounting a tube to a wall is addressed (figs. 1 and 2), the device comprising a mounting flange

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39 for coupling the device to the upstream conduit 67 delivering the gas and having: first and second faces (two faces of 39); an inboard surface 35 bounding a central aperture; an outboard perimeter (top of 39); and an array of bolt holes 61 between the first and second faces; a conduit 33 extending downstream from the flange; wherein the wall of the tubular piece 33 extends from an upstream rim 45 to a downstream rim 43 and has interior and exterior surfaces, along an upstream portion, the interior surface providing the flange inboard surface 35; wherein the flange is upstream of an exterior surface 21 of the device wall and the conduit 33 extends through the device wall 21 to protrude downstream of an interior surface of the device wall; means for mounting the nozzle (flange and bolts) to an upstream gas conduit (column 3 line 55, 56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hunter's cleaning apparatus by including flange and bolts to secure the conduit to the wall of the furnace in order to provide an apparatus where the conduit is easily removed by detaching the mounting flange as taught by Adams (column 2 line 36-38).

2. Claim 3, 4, 9-16, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Adams and further in view of Beusman 3,084,373. Hunter in view of Adams teaches the invention as claimed and as discussed above.

However, Hunter in view of Adams does not teach an apparatus wherein the cooling fluid inlet is along the flange and wherein the cooling fluid is a gas and its outlet

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opens to the vessel interior and discharges into the vessel interior, the cooling fluid outlet is between the inner and outer walls.

Beusman discloses in a soot blower apparatus (fig. 1), the apparatus comprising, cooling fluid inlet 18 located along the flange 17, wherein the cooling fluid is air (column 3 line 11, 12) and its outlet (pores of 13) opens to the vessel interior and discharges into the vessel interior (column 3 line 16-19, 24-26, 44-60) and the cooling fluid outlet 20 is between the inner and outer walls (fig 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hunter in view of Adams's cleaning apparatus by including all the limitations taught by Beusman and recited above in order to provide a cleaning apparatus that uses readily available and cheap air in an open cooling cycle where the air would be introduced into the furnace as taught by Beusman (column 1 line 41 42, column 3 line 25-27).

With regard to method claims 9-15, through the normal use and operation of Hunter in view of Adams and further in view of Beusman's invention discussed above the limitations of method of use recited in claims 9 -15 will obviously be met.

Response to Arguments

Applicant's arguments filed on October 22 2007 have been fully considered but they are not persuasive. Arguments addressed in previous action would not be repeated. Applicant's argument that the rejection of claim 4 was improper has been noted and corrected.

Applicant's argument about the motivation for using air instead of water is considered and not found persuasive. Air is definitely cheaper than water. Also it would be appropriate to discharge air into the furnace but not water.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUKA C. NDUBIZU whose telephone number is (571)272-6531. The examiner can normally be reached on Monday - Friday 8.30 - 4.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chuka C. Ndubizu
Patent Examiner

Steve McAllister
SPE

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/Steven B. McAllister/

Supervisory Patent Examiner, Art Unit 3749